

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-027702**Date Inspected:** 05-Jun-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

<b>CWI Name:</b>	Fred Michels and Bernie Docena			<b>CWI Present:</b>	<b>Yes</b>	<b>No</b>	
<b>Inspected CWI report:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Rod Oven in Use:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Electrode to specification:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Weld Procedures Followed:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Qualified Welders:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Verified Joint Fit-up:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Approved Drawings:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Approved WPS:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
				<b>Delayed / Cancelled:</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
<b>Bridge No:</b>	34-0006			<b>Component:</b>	SAS Tower		

**Summary of Items Observed:**

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At Tower elevation 77 meter, QA randomly observed ABF/JV qualified Rory Hogan continuing to perform all position Shielded Metal Arc Welding (SMAW) fillet welding Crosby size number 4 padeye on tower skin plates. There were four padeyes being welded on tower skin plates A and E on tower shafts South and East while there are only two being welded padeyes on tower skin plate A of tower shafts North and West. The padeyes are also being welded per Contract Change Order (CCO) #201 and per Caltrans approved drawing Tower Access Detail #30.

Prior welding, ABF foreman Rory Hogan was noted laying out the location of the padeyes while another ABF personnel was noted grinding off the paint on the tower where the padeye will be welded. After grinding, the same personnel preheated the tower skin plate to required temperature of more than 225°F. After reaching the required preheat temperature, ABF welder Rory Hogan performed the tack welding using SMAW with 3.2mm diameter E7018H4R electrode with measured working current of 130 amperes on the mentioned electrode.

As soon as the padeye was tack welded, the welder immediately preheated the tower skin plate and the padeye itself to the required preheat temperature of more than 225°F. The welder then fully fillet welded the Crosby padeye to 5mm all around fillet using the same electrode and size. During fillet welding, ABF QC Fred Michels was observed monitoring the preheat temperature and working current.

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At the end of the shift, the welder has completed fillet welding a total of 12 padeyes at tower four shafts elevation 77 meters.

At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC VT/MT of the welded PJP T- joints between the corner stiffener plate and tower skin/diaphragm plates and 5mm all around fillet weld joints between the Crosby padeye to tower skin plate . The QA verification was performed to verify that the welding and the VT/MT inspection performed by the QC inspector meet the requirements of the contract documents. At the conclusion of the QA verification it appeared that the weld and the QC inspection complied with the contract documents.

1. Tower 13meter diaphragm – corner stiffener PJP T-joint W139-2 weld cover QA verified.
2. Tower 13meter diaphragm – corner stiffener PJP T-joint W140-2 weld cover QA verified.
3. Tower 13meter diaphragm – corner stiffener PJP T-joint W137-1 weld cover QA verified.
4. Tower 13meter diaphragm – corner stiffener PJP T-joint W138-6 weld cover QA verified.
5. Tower elevation 109meter – Crosby padeye to tower skin plate 5mm all around fillet weld QA verified.
6. Tower elevation 99meter – Crosby padeye to tower skin plate 5mm all around fillet weld QA verified.

At Tower Base Electro Slag Weld (ESW), QA randomly observed ABF/JV qualified welder Lou Xiao Hua continuing to perform CJP groove welding cover repair. The welder was observed manually welding in the 3G (vertical) position utilizing Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E70018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1000 Repair. The ESW weld covers being repaired which are located at ESW 'P' transition butt joint N-043 below the 9 meter diaphragm are having excavations with less than five (5) mm depth that were rejected due to visual defects and Magnetic Particle Testing (MT) indications. Prior welding, the welder was noted preheating the plate to more than 300°F using propylene gas torch and was verified by ABF QC Bernie Docena. QC was also noted monitoring the parameters of the welder with measured working current of 124 amperes on the 3.2mm diameter E7018H4R. During the shift, monitoring of the cover weld repair was turned over to fellow QA William Clifford due to other given assignment.

At Tower elevation 77 meter, ABF personnel were noted preheating the plate to more than 225 degrees Fahrenheit using propylene gas torch prior SMAW fillet welding the Crosby size #4 padeye per CCO 201.



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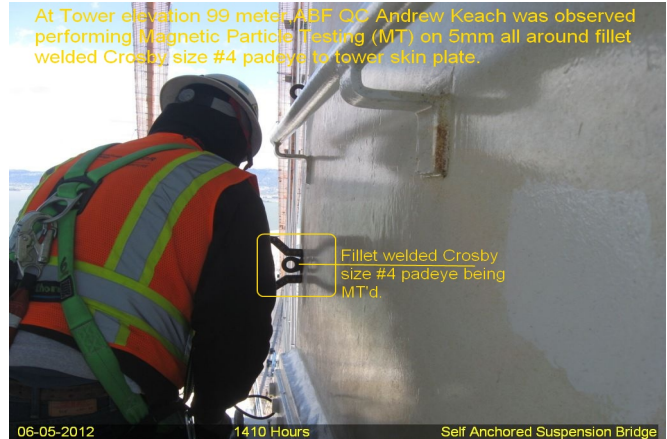
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At Tower elevation 77 meter, ABF welder Rory Hogan was observed continuing to perform Shielded Metal Arc Welding (SMAW) all around fillet welding Crosby size #4 padeye to tower skin plates.



06-05-2012 1443 Hours Self Anchored Suspension Bridge

At Tower elevation 99 meter ABF QC Andrew Keach was observed performing Magnetic Particle Testing (MT) on 5mm all around fillet welded Crosby size #4 padeye to tower skin plate.



06-05-2012 1410 Hours Self Anchored Suspension Bridge

### Summary of Conversations:

No significant conversation occurred today.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

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**Inspected By:** Lizardo, Joselito

Quality Assurance Inspector

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**Reviewed By:** Levell, Bill

QA Reviewer